

FrameSaver® SLV 9128 Quick Reference

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FrameSaver SLV 9126/9128 User's Guide

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Getting Started

If you have not yet installed and set up the FrameSaver SLV unit, do so now. Refer to the installation instructions that came with the unit.

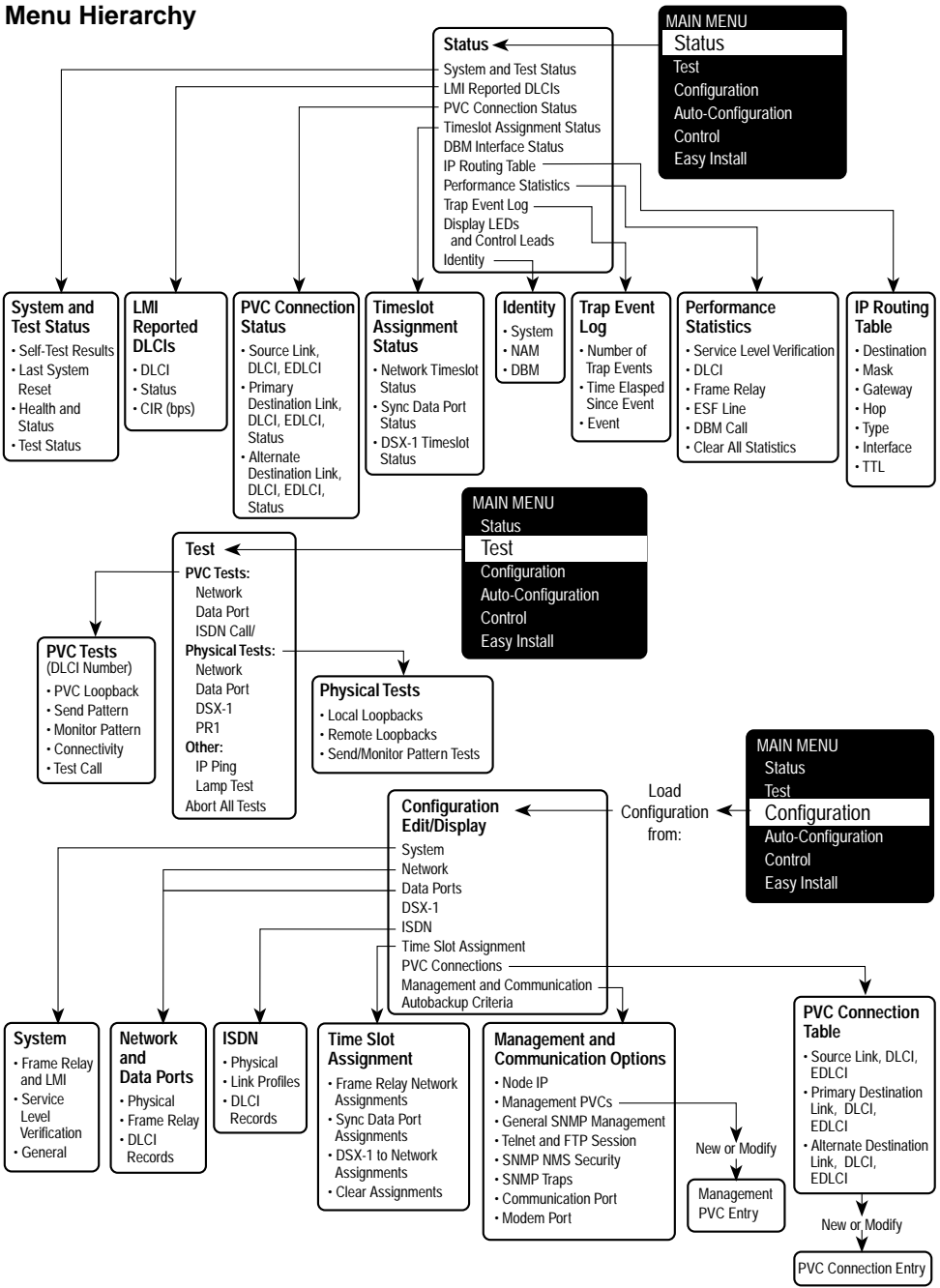
- *FrameSaver SLV 9128 1-Slot Unit Installation Instructions*
(Document No. 9128-A2-GN10)
- *FrameSaver SLV 9128 Network Access Module (NAM) Installation Instructions*
(Document No. 9128-A2-GN11)

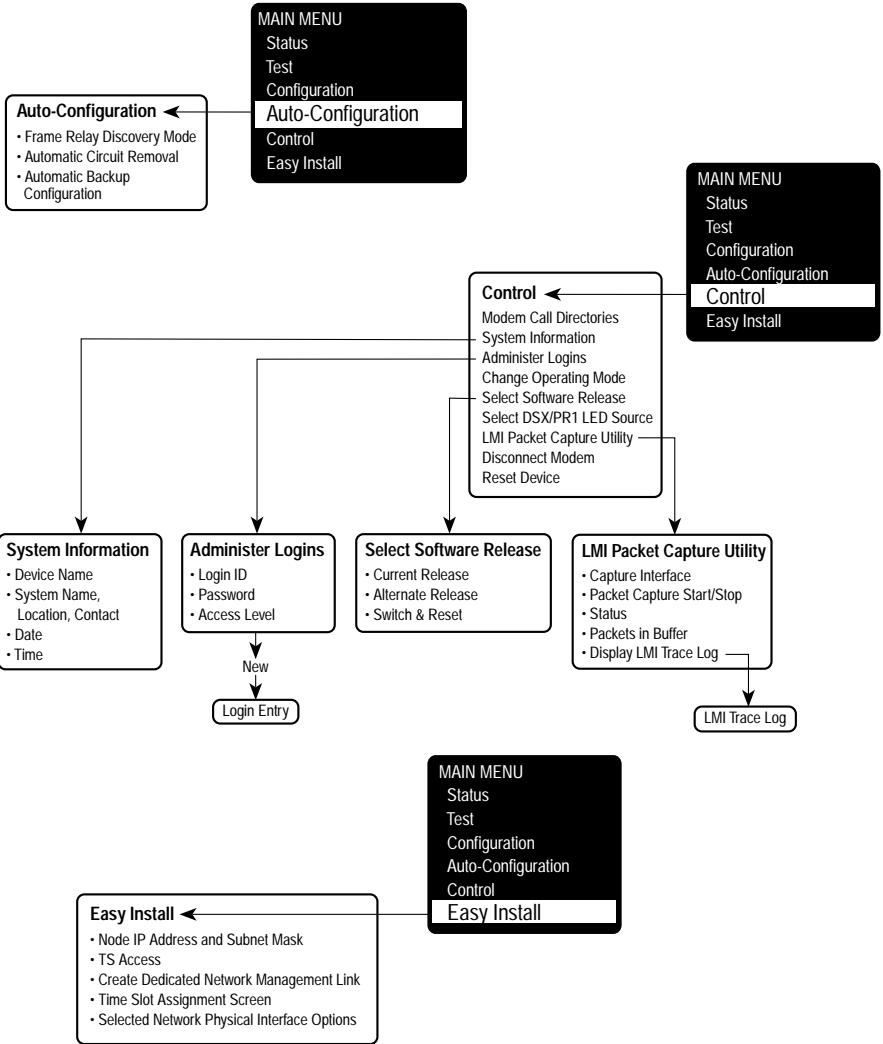
Before starting to use the FrameSaver SLV unit, it is recommended that you download the User's Guide so you have access to information about the unit, then print chapters or sections you may want to reference.

Menu Hierarchy

The Menu Hierarchy shows a pictorial view of the organization of the FrameSaver unit's screens, which can help you navigate the menus and access information.

Menu Hierarchy





00-16728b

Configuration Option Summaries

This section summarizes the configuration options accessed when you select Configuration from the Main Menu.

- System
- Physical (Network, Data Port, and ISDN)
- ISDN (Link Profiles)
- DSX-1
- Time Slot Assignment
 - Frame Relay Network Assignments
 - DSX-1 to Network Assignments
 - Sync Data Port Assignments
- Frame Relay (Network and Data Port)
- DLCI Records (Network, Data Port, and ISDN)
- PVC Connections
- Management and Communication
- Auto Backup Criteria

System

Select System Options to configure options applicable to the entire system.

- Frame Relay and LMI
- Service Level Verification
- General

Frame Relay and LMI

Select Frame Relay and LMI to configure the general frame relay options for the system.

| Frame Relay and LMI | |
|--------------------------------|--|
| Configuration Option | Settings Default in [Bold] |
| LMI Behavior | [Independent] , Port-1_Follows_Net1-FR1, Port-2_Follows_Net1-FR1, All_Ports_Follow_Net1-FR1 Net1-FR1_Follows_Port-1, Net1-FR1_Follows_Port-2, Port-1_Codependent_with_Net1-FR1, Port-2_Codependent_with_Net1-FR1 |
| Traffic Policing | Enable, [Disable] |
| LMI Error Event (N2) | 1, 2, [3] , 4, 5, 6, 7, 8, 9, 10 |
| LMI Clearing Event (N3) | [1] , 2, 3, 4, 5, 6, 7, 8, 9, 10 |
| LMI Status Enquiry (N1) | 1, 2, 3, 4, 5, [6] , . . . 255 |
| LMI Heartbeat (T1) | 5, [10] , 15, 20, 25, 30 |
| LMI Inbound Heartbeat (T2) | 5, 10, [15] , 20, 25, 30 |
| LMI N4 Measurement Period (T3) | 5, 10, 15, [20] , 25, 30 |

Service Level Verification

Select Service Level Verification to configure the SLV options for the system.

| Service Level Verification | |
|--------------------------------------|--|
| Configuration Option | Settings Default in [Bold] |
| SLV Sample Interval (secs) | 10–3600 [60] |
| SLV Delivery Ratio | Enable, [Disable] |
| DLCI Down on SLV Timeout | Enable, [Disable] |
| SLV Timeout Error Event Threshold | 1, 2, [3] , . . . 20 |
| SLV Timeout Clearing Event Threshold | [1] , 2, 3, . . . 20 |
| SLV Packet Size (bytes) | [64] –2048 |
| SLV Synchronization Role | [Tributary] , Controller, None |

General

Select **General** to configure a timeout period and duration for user-initiated loopbacks and pattern tests, a primary and secondary clock source for the system, and a system alarm relay.

| General | |
|-----------------------------|---|
| Configuration Option | Settings Default in [Bold] |
| Test Timeout | [Enable] , Disable |
| Test Duration (min) | 1–120 [10] |
| Primary Clock Source | [Net1] , DSX, Internal, DBM |
| Secondary Clock Source | Net1, DSX, [Internal] , DBM |
| System Alarm Relay | Enable, [Disable] |

Physical

Select **Physical** to configure the physical characteristics of each interface:

- Network
- Data Ports
- ISDN

Network

Select **Network**, then **Physical** to configure physical characteristics for the T1 network interface.

| Network | |
|----------------------------------|---|
| Configuration Option | Settings Default in [Bold] |
| Line Framing Format | D4, [ESF] |
| Line Coding Format | AMI, [B8ZS] |
| Line Build Out (LBO) | [0.0] , -7.5, -15, -22.5 |
| Bit Stuffing | [62411] , Disable |
| Transmit Timing | [System] , Interface |
| Network Initiated LLB | [Enable] , Disable |
| Network Initiated PLB | [Enable] , Disable |
| Network Initiated DCLB | Disable, [V.54_&_ANSI] |
| ANSI Performance Report Messages | Enable, [Disable] |
| Excessive Error Rate Threshold | [10E-4] , 10E-5, 10E-6, 10E-7, 10E-8, 10E-9 |
| Circuit Identifier | <i>Text Field</i> , [Clear] |

Data Ports

Select Data Ports, then Physical to configure physical characteristics for the port connected to the DTE.

| Data Ports | |
|---|---|
| Configuration Option | Settings Default in [Bold] |
| Port Status | [Enable] , Disable |
| Port Use <i>(Port-2 only)</i> | [Frame Relay] , Synchronous Data |
| For Port-1 or when Port Use is set to Frame Relay on Port-2: | |
| Max Port Rate (Kbps) <i>(Port-2 only)</i> | [1536] , 2048 |
| Invert Transmit Clock | [Auto] , Enable, Disable |
| Transmit Clock Source | [Internal] , External |
| Monitor DTR | [Enable] , Disable |
| Monitor RTS (Control) | [Enable] , Disable |
| Port (DTE) Initiated Loopback | [Disable] , Local, Both |
| When Port Use is set to Synchronous Data on Port-2: | |
| Port Base Rate (Kbps) | [Nx64] , Nx56 |
| Invert Transmit Clock | [Auto] , Enable, Disable |
| Transmit Clock Source | [Internal] , External |
| Monitor DTR | [Enable] , Disable |
| Monitor RTS (Control) | [Enable] , Disable |
| Port (DTE) Initiated Loopback | [Disable] , DTPLB, DCLB, Both |
| Invert Transmit and Receive Data | Enable, [Disable] |
| Action on Network Yellow Alarm | None, [Halt] |
| Network Initiated Data Channel Loopback | [Disable] , V.54, ANSI_FT1, V.54_&_ANSI |

ISDN

Select ISDN, then Physical to configure physical characteristics for the ISDN interface if an ISDN DBM is installed.

The following table shows the configuration options for an ISDN BRI DBM.

| ISDN BRI | |
|----------------------------------|--|
| Configuration Option | Settings Default in [Bold] |
| Interface Status | Enable, [Disable] |
| Originate or Answer | [Originate] , Answer |
| Service Profile ID 1 or 2 (SPID) | [Clear] (3–20 digits) |
| Local Phone Number 1 or 2 | [Clear] (up to 10 digits) |

The following table shows the configuration options for an ISDN PRI DBM.

| ISDN PRI | |
|----------------------------------|--|
| Configuration Option | Settings Default in [Bold] |
| Interface Status | Enable, [Disable] |
| Originate or Answer | Originate, [Answer] |
| Switch Type | [NI-2] , ATT_4ESS, ATT_5ESS |
| Local Phone Number | [Clear] (up to 10 digits) |
| Line Framing Format | D4, [ESF] |
| Line Build Out (LBO) | [0.0] , –7.5, –15, –22.5 |
| Network Initiated LLB | [Enable] , Disable |
| Network Initiated PLB | [Enable] , Disable |
| ANSI Performance Report Messages | Enable, [Disable] |
| Excessive Error Rate Threshold | [10E-4] , 10E-5, 10E-6, 10E-7, 10E-8, 10E-9 |
| Circuit Identifier | <i>Text Field</i> , [Clear] |

ISDN Link Profiles

Select ISDN, then Link Profiles to configure the ISDN Link Profiles.

| Link Profiles | |
|---------------------------|--|
| Configuration Option | Settings Default in [Bold] |
| Link Name | <i>ASCII text entry</i> , [HQ_Site] |
| Link Status | Auto, [Disable] |
| Outbound Phone Number | 0–9, *, #, <space>, _, -,), or (|
| Inbound Calling ID 1 or 2 | 0–9 |
| Maximum Link Rate (Kbps) | BRI DBM: [64] , 128 PRI DBM: [64] , 128, . . . 1472 |

DSX-1

Select DSX-1 to configure the DSX-1 interface.

| DSX-1 | |
|--------------------------------|--|
| Configuration Option | Settings Default in [Bold] |
| Interface Status | Enable, [Disable] |
| Line Framing Format | D4, [ESF] |
| Line Coding Format | AMI, [B8ZS] |
| Line Equalization | [0–133] , 133–266, 266–399, 399–533, 533–655 |
| Send all Ones on DSX-1 Failure | [Enable] , Disable |

Time Slot Assignment

Select Time Slot Assignment to make cross-connection assignments.

Select Frame Relay Network Assignments to assign DS0s on the T1 network interface(s) for frame relay links.

| Frame Relay-to-Network Interface Time Slot Assignment | |
|---|--|
| Network Channel | Settings Default in [Bold] |
| Time Slot Discovery | [Enable] , Disable |
| N01–N24 | [Available] , Assigned, FrameRly1 |

Select DSX-1-to-Network Assignments to assign or unassign DSX-1 timeslots to T1 network interface timeslots.

| DSX-1-to-Network Interface Time Slot Assignment | |
|---|---|
| Network Channel | Settings Default in [Bold] |
| N01–N24 | [Available] , Assigned, DSX-1/yy |
| Signaling and Trunk Conditioning | None, [RBS] , E&M-idle, E&M-busy, FXSg-idle, FXSg-busy, , FXS1-idle, FXS1-busy, FXSD-idle, FXSD-busy, PLAR3idle, PLAR3busy, PLAR4idle, PLAR4busy, DPO-idle, DPO-busy, FXOg-idle, FXOg-busy, FXO1-idle, FXO1-busy, FXOD-idle, FXOD-busy, DPT-idle, DPT-busy, USER-0000, USER-0001, USER-0010, USER-0011, USER-0100, USER-0101, USER-0110, USER-0111, USER-1000, USER-1001, USER-1010, USER-1011, USER-1100, USER-1101, USER-1110, USER-1111 |

Select Sync Data Port Assignments to assign or unassign a synchronous data port to the Network or DSX-1 interface timeslots.

| Sync Data Port-to-Network or DSX-1 Interface Time Slot Assignment | |
|---|--|
| Network or DSX-1 Channel | Settings Default in [Bold] |
| Assign To | [Net1] , DSX1-1 |
| N01–N24 (Net1) | [Available] , Assigned, SsPn |
| D01–N24 (DSX1-1) | |

Frame Relay

Select Frame Relay to configure the Frame Relay characteristics of the following interfaces:

- Network
- Data Ports

| Frame Relay | |
|--|--|
| Configuration Option | Settings Default in [Bold] |
| LMI Protocol | Initialize_From_Net1FR1, Initialize_From_Interface, Auto_On_LMI_Fail, Standard, Annex-A, Annex-D [Initialize_From_Interface] for a data port link. [Auto_On_LMI_Fail] for a network link. |
| LMI Parameters | [System], Custom |
| When LMI Parameters is set to System: | |
| Frame Relay DS0s Base Rate | [Nx64], Nx56 |
| When LMI Parameters is set to Custom: | |
| Frame Relay DS0s Base Rate | [Nx64], Nx56 |
| LMI Error Event (N2) | 1, 2, [3], 4, 5, 6, 7, 8, 9, 10 |
| LMI Clearing Event (N3) | [1], 2, 3, 4, 5, 6, 7, 8, 9, 10 |
| LMI Status Enquiry (N1) | 1, 2, 3, 4, 5, [6], . . . 255 |
| LMI Heartbeat (T1) | 5, [10], 15, 20, 25, 30 |
| LMI Inbound Heartbeat (T2) | 5, 10, [15], 20, 25, 30 |
| LMI N4 Measurement Period (T3) | 5, 10, 15, [20], 25, 30 |

DLCI Records

Select DLCI Records to manually configure DLCI records for each interface. The Auto-Configuration feature provides automatic configuration of DLCI records.

Select DLCI Records to configure the DLCI Records for the following interfaces:

- Network
- Data Port
- ISDN

The Auto-Configuration feature provides automatic DLCI record configuration.

| DLCI Records for Each Interface | |
|---------------------------------|--|
| Configuration Option | Settings Default in [Bold] |
| DLCI Number | 16–1007 |
| DLCI Type | Standard, Multiplexed [Standard] for DLCIs on user data ports. [Multiplexed] for network and ISDN interfaces. |
| CIR (bps) | 0–1536000 [64000] |
| Tc | <i>This field displays the committed rate measurement interval to be used for the DLCI based upon the displayed option settings.</i> |
| Committed Burst Size Bc (Bits) | [CIR] , Other |
| Bc | 0–1536000 [64000] |
| Excess Burst Size Be (Bits) | |
| Be | 0–1536000 [1472000] |
| DLCI Priority | Low, Medium, [High] |
| Outbound Management Priority | Low, [Medium] , High |

PVC Connections

Select PVC Connections to manually configure the logical connections between the selected interface and the data ports. The Auto-Configuration feature provides automatic configuration of PVC connections.

| PVC Connections | |
|-----------------------------|--|
| Configuration Option | Settings Default in [Bold] |
| Source Link | Port- <i>n</i> , <i>ISDN Link Name</i> , Net1-FR1 |
| Source DLCI | 16 –1007 |
| Source EDLCI | 0 – 62 |
| Primary Destination Link | <i>ISDN Link Name</i> , Net1-FR1 |
| Primary Destination DLCI | 16 –1007 |
| Primary Destination EDLCI | 0 – 62 |
| Alternate Destination Link | <i>ISDN Link Name</i> , Net1-FR1 |
| Alternate Destination DLCI | 16 –1007 |
| Alternate Destination EDLCI | 0–62 |

Management and Communication

Select Management and Communication to configure the FrameSaver unit so it can be managed by an NMS or Telnet terminal, and to select the appropriate protocols.

- Node IP
- Management PVCs
- General SNMP Management
- Telnet and FTP Sessions
- SNMP NMS Security
- SNMP Traps
- Communication Port
- Modem Port

Node IP

Select Node IP to configure support of the IP communication network.

| Node IP | |
|---------------------------------|--|
| Configuration Option | Settings Default in [Bold] |
| Node IP Address | 001.000.000.000 – 223.255.255.255, [Clear] |
| Node Subnet Mask | [000.000.000.000] – 255.255.255.255, Clear |
| Default IP Destination | [None] , Modem, COM, <i>PVCname</i> |
| TS Access Management Link | [None] , <i>PVCname</i> |
| TS Management Link Access Level | [Level-1] , Level-2, Level-3 |

Management PVCs

Select Management PVCs to configure a Management PVC for in-band management. The Auto-Configuration feature provides automatic configuration of Management PVCs on the Network interface.

| Management PVCs | |
|----------------------|---|
| Configuration Option | Settings Default in [Bold] |
| Name | <i>ASCII text entry</i> (8 characters) |
| Intf IP Address | [Node-IP-Address] , Special (<i>address entry: 001.000.000.000 – 223.255.255.255</i>) |
| Intf Subnet Mask | [Node-Subnet-Mask] , Calculate, Special (<i>address entry: 000.000.000.000 – 255.255.255.255</i>) |
| Set DE | Enable, [Disable] |
| Primary Link | Net1-FR1, Port- <i>n</i> , <i>ISDN Link Name</i> , Clear |
| Primary DLCI | 16–1007 |
| Primary EDLCI | 0–62 |
| Primary Link RIP | None, Standard_out, Proprietary [Proprietary] for management links on multiplexed DLCIs. [Standard_out] for management links on standard DLCIs. |
| Alternate Link | Net1-FR1, Port- <i>n</i> , <i>ISDN Link Name</i> , Clear |
| Alternate DLCI | 16–1007 |
| Alternate EDLCI | 0–62 |

General SNMP Management

Select General SNMP Management to configure the FrameSaver unit so it can be managed as an SNMP agent.

| General SNMP Management | |
|-------------------------|--|
| Configuration Option | Settings Default in [Bold] |
| SNMP Management | [Enable] , Disable |
| Community Name 1 | ASCII text entry, [Public] , Clear |
| Name 1 Access | Read, [Read/Write] |
| Community Name 2 | ASCII text entry, [Clear] |
| Name 2 Access | [Read] , Read/Write |

Telnet and FTP Sessions

Select Telnet and FTP Sessions to configure access to the FrameSaver unit through Telnet or FTP, and to determine whether security will be required.

| Telnet and FTP Sessions | |
|-----------------------------|--|
| Configuration Option | Settings Default in [Bold] |
| Telnet Session | [Enable] , Disable |
| Telnet Login Required | Enable, [Disable] |
| Session Access Level | [Level-1] , Level-2, Level-3 |
| Inactivity Timeout | [Enable] , Disable |
| Disconnect Time (Minutes) | 1–60 [10] |
| FTP Session | [Enable] , Disable |
| FTP Login Required | Enable, [Disable] |
| FTP Max Receive Rate (Kbps) | 1– [1536] |

SNMP NMS Security

Select SNMP NMS Security to configure access to the unit.

| SNMP NMS Security | |
|-------------------------|--|
| Configuration Option | Settings Default in [Bold] |
| NMS IP Validation | Enable, [Disable] |
| Number of Managers | [1] –10 |
| NMS <i>n</i> IP Address | 001.000.000.000–223.255.255.255, [Clear] |
| Access Type | [Read] , Read/Write |

SNMP Traps

Select SNMP Traps to configure desired SNMP traps and dialing out when SNMP traps occur.

| SNMP Traps | |
|------------------------------|--|
| Configuration Option | Settings Default in [Bold] |
| SNMP Traps | Enable, [Disable] |
| Number of Trap Managers | [1] – 6 |
| NMS <i>n</i> IP Address | 001.000.000.000–223.255.255.255, [Clear] |
| Initial Route Destination | [AutoRoute] , Modem, COM, <i>PVCname</i> |
| General Traps | Disable, Warm, AuthFail, [Both] |
| Enterprise Specific Traps | Enable, [Disable] |
| Link Traps | Disable, Up, Down, [Both] |
| Link Traps Interfaces | Network, DSX-1, T1s, Ports, DBM, [All] |
| DLCI Traps on Interfaces | Network, Ports, [All] |
| RMON Traps | [Enable] , Disable |
| Trap Dial-Out | Enable, [Disable] |
| Trap Disconnect | [Enable] , Disable |
| Call Retry | Enable, [Disable] |
| Dial-Out Delay Time (Min) | 1–10 [5] |
| Alternate Dial-Out Directory | [None] , 1–5 |

Communication Port

Select Communication Port to configure the FrameSaver unit's COM port.

| Communication Port | |
|--|--|
| Configuration Option | Settings Default in [Bold] |
| Port Use | [Terminal] , Net Link |
| When Port Use is set to Terminal: | |
| Data Rate (Kbps) | 9.6, 14.4, [19.2] , 28.8, 38.4, 57.6, 115.2 |
| Character Length | 7, [8] |
| Parity | [None] , Even, Odd |
| Stop Bits | [1] , 2 |
| Ignore Control Leads | [Disable] , DTR |
| Login Required | Enable, [Disable] |
| Port Access Level | [Level-1] , Level-2, Level-3 |
| Inactivity Timeout | [Enable] , Disable |
| Disconnect Time (Minutes) | 1–60 [10] |
| When Port Use is set to Net Link: | |
| Data Rate (Kbps) | 9.6, 14.4, [19.2] , 28.8, 38.4, 57.6, 115.2 |
| Character Length | 7, [8] |
| Parity | [None] , Even, Odd |
| Stop Bits | [1] , 2 |
| Ignore Control Leads | [Disable] , DTR |
| IP Address | 001.000.000.000–223.255.255.255, [Clear] |
| Subnet Mask | [000.000.000.000] –255.255.255.255, Clear |
| Link Protocol | [PPP] , SLIP |
| RIP | [None] , Standard_out |

Modem Port

Select Modem Port to configure the FrameSaver unit's Modem port.

| Modem Port | |
|--|--|
| Configuration Option | Settings Default in [Bold] |
| Port Use | [Terminal] , Net Link |
| When Port Use is set to Terminal: | |
| Dial-In Access | [Enable] , Disable |
| Login Required | Enable, [Disable] |
| Port Access Level | [Level-1] , Level-2, Level-3 |
| Inactivity Timeout | [Enable] , Disable |
| Disconnect Time (Minutes) | 1–60 [10] |
| When Port Use is set to Net Link: | |
| Dial-In Access | [Enable] , Disable |
| IP Address | 001.000.000.000–223.255.255.255, [Clear] |
| Subnet Mask | [000.000.000.000] –255.255.255.255, Clear |
| Link Protocol | [PPP] , SLIP |
| Alternate IP Address | 001.000.000.000 –223.255.255.255, [Clear] |
| Alternate Subnet Mask | [000.000.000.000] –255.255.255.255, Clear |
| RIP | [None] , Proprietary, Standard_out |

Auto Backup Criteria

Select Auto Backup Criteria to control when automatic backup will take place.

| Auto Backup Criteria | |
|--------------------------|--|
| Configuration Option | Settings Default in [Bold] |
| Auto Backup | Enable, [Disable] |
| When Auto Backup Allowed | [Always] , Restrict |
| Backup Allowed From | Monday–Sunday, [00:00] –23:00 |
| Backup Allowed To | Monday–Sunday, 00:00 – [24:00] |

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- **Telephone:** Call our automated system to receive current information via fax or to speak with a company representative.
 - Within the U.S.A., call 1-800-870-2221
 - Outside the U.S.A., call 1-727-530-2340

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Patent Notification

FrameSaver SLV products are protected by U.S. Patents: 5,550,700 and 5,654,966. Other U.S. patents pending.